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SICKNESS AMONG MALE INDUSTRIAL EMPLOYEES DURING THE FIRST QUARTER OF 1936¹

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The incidence rate of cases of illness causing disability for 8 calendar days or longer among 146,411 male industrial employees in the first quarter of 1936 was 7 percent above the rate recorded for the first 3 months of 1935. The rate in 1936, however, was 4 percent below the average frequency of cases during the first 3 months of the preceding 5 years; i. e., 1931-35. Sickness rates for the initial quarter of the years 1935 and 1936 were based on the experience of employees of the same companies, 29 in number. The rates for the first quarter of the years 1931 to 1935 included 24 of these companies.

The respiratory group of diseases accounted for the major portion of the increase in the incidence of illness in the first quarter of 1936 as compared with the corresponding period of 1935. The frequency of new cases of respiratory disease, expressed in terms of the annual number of cases per 1,000 men, was 54.0 for the first quarter of 1936 as compared with 48.6 for the January-March period of 1935. However, both rates are below the 5-year average of 56.3 new cases of respiratory disease per 1,000 men.

With the exception of tuberculosis of the respiratory system, each respiratory disease subgroup showed higher incidence rates in the first quarter of 1936 than in the corresponding quarter of 1935. The frequency of disabilities of 8 days and longer on account of diseases of the pharynx and tonsils was only slightly higher than in the first quarter of 1935, but the incidence rate of bronchitis (acute and chronic) was higher by nearly one-half (47 percent), exceeding by 38 percent the 5-year average for this period of the year.

Another development of an unfavorable nature was an increase in the number of cases of pneumonia (all forms). In the first quarter of 1936 pneumonia occurred at a rate which was 45 percent above its average incidence during the corresponding period of the years 1931

¹ A report covering the final quarter of 1935 and the entire year 1935 was published in the *Public Health Reports* for May 22, 1936, vol. 51, no. 21, pages 643-645.

to 1935, inclusive. Mortality from pneumonia also increased in the industrial population of the country during the first quarter of 1936.²

The rate of 4.8 new cases of pneumonia per 1,000 men is the highest observed for any quarter year since the first 3 months of 1929, when pneumonia occurred at the rate of 5.1 cases annually per 1,000 men. In the first 3 months of 1932 the incidence rate fell to 2.6, which was the lowest first-quarter frequency recorded for pneumonia since the inauguration of industrial morbidity reporting 15 years ago. There was very little change in the frequency of the disease during the winter months of 1933 and 1934, but the incidence rate increased appreciably in 1935 (to 3.8), and rose to 4.8 during the first quarter of 1936, as has been mentioned. This trend is suggestive of correlation between pneumonia frequency and the rate of industrial activity, a subject which will be discussed in more detail in a subsequent paper.

The frequency of influenza was slightly higher than in the corresponding period of 1935, but was appreciably below the 5-year average. A sharp drop in fatal influenza cases during the first quarter of 1936 is reported by the Metropolitan Life Insurance Co.³

A very large decrease is shown in the occurrence of new cases of respiratory tuberculosis during the period under consideration, indicative of a continuation of the very favorable trend both in the frequency of new cases and in the mortality from this disease. Up to the end of March the improvement over last year has been so marked as practically to assure new minimum case and death rates for tuberculosis in the present year.

Nonrespiratory diseases as a whole occurred at very slightly higher incidence during the January-March period of 1936 than in the corresponding period of the preceding year. The frequency of appendicitis, hernia, diseases of the organs of locomotion, and of the infectious and parasitic diseases was greater than in the same period of 1935. The only nonrespiratory subgroup, however, which showed rates above the average for the 5-year period were (a) diarrhea and enteritis, (b) appendicitis, and (c) infectious and parasitic diseases. Morbidity from the principal degenerative diseases was substantially at the level of the 5-year average. Definite improvement appears to have occurred in the incidence rate of the rheumatic group of diseases among the male employees of the companies which have made their morbidity reports available.

² Cf. Statistical Bulletin, Metropolitan Life Insurance Co., vol. 17, no. 4, April 1936, p. 5.

³ Idem.

TABLE 1.—*Frequency of disability lasting 8 calendar days or longer in the first quarter of 1936, compared with the first quarter of several preceding years. (Male morbidity experience of industrial companies which reported their cases to the United States Public Health Service)*¹

Diseases and disease groups which caused disability. [Numbers in parentheses are disease title numbers from the International List of the Causes of Death, fourth revision, Paris, 1929]	Annual number of disabilities per 1,000 men in the first quarter of—		
	1936	1935	5 years 1931-35 ²
Sickness and nonindustrial injuries ³	111.4	104.0	115.6
Nonindustrial injuries.....	11.1	10.2	10.9
Sickness ³	100.3	93.8	104.7
Respiratory diseases.....	54.0	48.6	56.3
Bronchitis, acute and chronic (106).....	7.2	4.9	5.2
Diseases of the pharynx and tonsils (115a).....	5.5	5.3	5.7
Influenza and grippé (11).....	29.2	27.7	35.4
Pneumonia, all forms (107-109).....	4.8	3.9	3.3
Tuberculosis of the respiratory system (23).....	.7	1.1	1.1
Other respiratory diseases (104, 105, 110-114).....	6.6	5.7	5.6
Nonrespiratory diseases.....	46.3	45.2	48.4
Diseases of the stomach, cancer excepted (117-118).....	3.3	3.7	3.8
Diarrhea and enteritis (120).....	1.1	1.0	.9
Appendicitis (121).....	3.8	3.4	3.5
Hernia (122a).....	1.7	1.3	1.7
Other digestive diseases (115b, 116, 122b-129).....	2.8	2.9	3.1
Rheumatic group, total.....	10.0	10.5	12.0
Rheumatism, acute and chronic (56, 57).....	4.3	4.7	6.0
Diseases of the organs of locomotion (156b).....	3.4	3.0	3.5
Neuralgia, neuritis, sciatica (87a).....	2.3	2.8	2.5
Neurasthenia and the like (part of 87b).....	.8	.9	1.0
Other diseases of the nervous system (78-85, part of 87b).....	1.3	1.1	1.3
Diseases of the heart and arteries, and nephritis (90-99, 102, 130-132).....	4.1	4.4	4.2
Other genito-urinary diseases (133-138).....	2.4	2.5	2.4
Diseases of the skin (151-153).....	2.4	2.4	2.5
Infectious and parasitic diseases except influenza (1-10, 12-22, 24-33, 36-44).....	3.5	2.7	3.2
Ill-defined and unknown causes (200).....	2.4	2.0	1.9
All other diseases (45-55, 58-77, 88, 89, 100, 101, 103, 154-156a, 157, 162).....	6.7	6.4	6.9
Average number of males covered in the record.....	146,411	138,234	144,924
Number of companies included.....	29	29	24

¹ In 1935 and 1936 the same companies are included.

² The rates for the first quarter of the years 1931 to 1935 include 24 of the 29 companies reporting in 1935 and 1936. These companies employed an average of 114,454 men during the 5-year period, or 79 percent of the 144,960 men representing the sample population for the 5-year averages.

³ Exclusive of disability from the venereal diseases and a few numerically unimportant causes of disability.

COMMUNICABLE DISEASES AND ACTIVITIES FOR THEIR CONTROL IN THE BRUNSWICK-GREENSVILLE AREA¹

Brunswick-Greenville Health Administration Studies No. 7

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INTRODUCTION

The purpose of this paper is to present an analysis of the program of a rural health department in relation to acute communicable disease. The basic data apply to Brunswick and Greenville Counties, Virginia, and were taken both from records of the health department and from schedules completed by field workers of the United States Public Health Service who visited a representative sample of homes which included 1,009 families, or approximately one-sixth of the bi-

¹ From Office of Studies of Public Health Methods, in cooperation with Division of Domestic Quarantine.

county population. The records provide a picture of actual service performed by the individual members of the health department staff on specific problems, whereas the schedules make available a general description of the family and environment, of the total health problems, and of the services which were received through public and private agencies operating in the locality, including physicians, dentists, nurses, and midwives engaged in private practice. A complete description of the Brunswick-Greenville area, the health department and its program, and the method of collecting the data has been given in previous papers to which the reader is referred (1, 2, 3, 4, 5, 6).

The people living within Brunswick and Greenville Counties experienced the same general needs for communicable disease protection as may be found in other rural communities, namely, medical attention for those contracting disease, regulatory measures for reducing the spread of disease from infected persons to others, sanitation services, and immunization. The extent to which these measures were needed is largely indicated by the communicable disease mortality and morbidity experienced.

COMMUNICABLE DISEASE MORTALITY AND MORBIDITY

MORTALITY

Average annual mortality rates in Brunswick and Greenville Counties for a selected group of communicable diseases, based upon two 5-year periods, 1921-25 and 1926-30, are given in table 1. A comparison of the sum of the rates for the period 1921-25 with the sum of those for 1926-30, given in table 1, indicates that the bicounty area had experienced a decline in communicable disease mortality. The mortality rate for each of the diseases listed in the table except influenza and measles was lower in the second 5-year period than in the first for both counties and for the white- and colored-population groups. In the second period, 1926-30, influenza mortality showed a definite increase over the preceding 5-year period, particularly in Greenville County, where the increase in influenza and measles mortality more than offset the reductions for several other communicable diseases in that county. During 1926-30 the sum of the rates for Greenville County was about 46 percent higher than that for Brunswick County. The table shows that mortality rates were usually higher among the Negroes than the whites, particularly in the second period when the rates for several of the diseases were from 2 to 4 times higher for the Negro group than for the white group. Average annual mortality rates for the Negro had dropped, however, for each of the diseases except influenza.

The period since 1930 for which mortality figures are available is considered too short for comparative purposes. However, after the

figures of the total area for the years 1931-33 were reviewed, decreases were noted in the rates for diarrhea and dysentery among those under 2 years of age, diphtheria, malaria, measles, and typhoid fever; there were no deaths from scarlet fever, influenza mortality continued to increase, and the rate for whooping cough showed a decided rise.

A comparison of the average annual communicable disease mortality rates for the 5-year period 1926-30 in Brunswick and Greensville Counties was made with those for the rural part of the State of Virginia. It was found that the sum of the rates for the diseases listed in table 1 was somewhat lower for the two counties than for the rural part of the State, in spite of the fact that the rates for the former were based upon a population having a high percentage of colored individuals. The rates for diarrhea and dysentery affecting children under 2 years of age, malaria, measles, and the typhoid fevers were higher in the counties. When the comparisons were made on the basis of color, the rates were somewhat more favorable for the counties. While the sum of the rates for the diseases listed was slightly lower for the two counties than for the rural part of the State of Virginia, the difference in the rates for white individuals was marked, being nearly 30 percent lower in the counties.

TABLE 1.—Average annual death rates during the 5-year periods, 1921-25 and 1926-30, for selected communicable diseases in the Brunswick-Greensville area, according to color and county

Disease	Death rate per 100,000 persons from specified diseases									
	Brunswick and Greensville Counties						Brunswick County		Greensville County	
	Total		White		Colored					
	1921-25	1926-30	1921-25	1926-30	1921-25	1926-30	1921-25	1926-30	1921-25	1926-30
Total for the diseases listed...	157.4	122.7	126.3	83.8	184.2	155.7	161.2	107.1	153.9	156.3
Diarrhea and dysentery under 2 years of age.....	47.0	32.0	34.4	21.0	56.5	45.0	47.0	37.9	47.5	30.6
Diphtheria.....	17.5	7.7	23.0	7.0	13.6	8.2	21.1	12.6	11.5	0
Influenza.....	44.0	54.0	38.8	39.0	51.3	64.6	43.0	33.0	45.8	80.0
Malaria.....	4.2	2.4	4.3	2.8	4.2	2.0	2.0	1.0	8.2	4.6
Measles.....	7.2	7.1	2.8	4.2	10.5	9.2	7.7	3.0	6.5	13.7
Scarlet fever.....	1.2	0	1.4	0	1.0	0	2.0	0	0	0
Typhoid fever.....	12.7	9.5	8.6	5.6	15.7	12.3	9.6	6.8	18.0	13.7
Whooping cough.....	23.6	10.0	13.0	4.2	31.4	14.4	28.8	7.8	16.4	13.7

MORBIDITY

The best information available on communicable disease incidence in the area is an estimate based upon illness data obtained from the surveyed sample of families. This estimate is regarded as a conservative one, since experience in other surveys of a similar character has indicated that morbidity figures for a 12-month period based upon information obtained at a single visit would represent an under-

statement of illness because of failure of the informant to recall cases where the course of the disease was mild in character. In other words, the figures represent illness only insofar as it is recognized and reported by the family. There are doubtless instances where the diagnoses of certain illnesses would have been corrected had it been possible to obtain a medical opinion following an examination at the time the illnesses actually occurred; it is believed, however, that the survey data provide the essential details of the morbidity experience in Brunswick and Greenville Counties for the 12-month survey period.

The number of cases of notifiable acute communicable disease that was stated to have occurred in the surveyed sample of families is presented in table 2 with the annual morbidity rates per 1,000 persons, the estimated number of cases occurring in the total bicounty population for the same period, and the number of cases reported to the State from the area for the calendar year most nearly approximating the survey period. It is recognized that the number of cases of any particular disease in a given area may vary markedly from year to year, especially if small populations are considered. The estimated total of about 3,370 cases of disease for the diagnoses listed demonstrates, however, that the problem of communicable disease control was much more extensive than was shown by the number of cases reported from the area to the State.

TABLE 2.—Cases of certain reportable communicable diseases; estimated morbidity rates per 1,000 persons; and estimated number of cases for the entire area, based on the family survey; also the number of cases reported to the State health department during the calendar year most nearly approximating the survey period in Brunswick and Greenville Counties

Disease	Number of cases reported in surveyed families	Morbidity rate per 1,000 individuals	Estimated number of cases for entire population	Number of cases reported to State health department
Total for the diseases listed.....	561	99.6	3,366	330
Conjunctivitis.....	12	2.1	72	0
Chicken pox.....	46	8.2	276	2
Diarrhea and dysentery.....	80	14.2	450	22
Diphtheria.....	19	3.4	114	34
Influenza.....	155	27.5	930	134
Malaria.....	13	2.3	78	3
Measles.....	53	9.4	318	17
Meningococcus meningitis.....	0	0	0	1
Mumps.....	103	18.3	618	0
Pneumonia.....	23	4.1	138	37
Scarlet fever.....	10	1.8	60	27
Syphilis.....	2	.4	12	0
Typhoid fever.....	2	.4	12	21
Typhus fever.....	1	.2	6	0
Whooping cough.....	42	7.5	252	32

CONTROL FACILITIES

The principal facilities for the control of communicable diseases were those provided by the local physicians, the local health department staff, and the personnel of the State health department. Legal

authority for the institution of control measures was provided by State regulations.

There were 18 local physicians residing in the bicounty area whose participation in control activities was limited for the most part to the care of the sick and the reporting of cases to the health department. Most of the cases were cared for in the home, as there were no hospitals in the area and it was contrary to the policy of nearby hospitals to admit patients having communicable disease other than typhoid fever. The superintendent of the poor in each county could employ a physician to care for indigent persons acutely ill with a communicable disease. This was done, as a rule, after the health officer had investigated the cases and had reported that medical aid was urgently needed. The private physicians in the area performed very little immunization work.

A medical health officer, two nurses, and a sanitation officer made up the staff of the local health department. Authority to investigate communicable diseases and to impose regulatory measures including quarantine and isolation was vested in the health officer. By agreement with the local physicians, the administration of intensive immunization programs to protect the population against outbreaks of diphtheria, smallpox, and typhoid fever was a function of the health department. The health officer was available for consultation with physicians where a communicable disease was suspected. When cases of acute illness without medical care were found by members of the health department staff, the family was urged to consult a private physician; and in certain instances, where for financial reasons this could not be done, the case was referred to the superintendent of the poor. A few cases of scabies and impetigo in indigent families were treated by the health department.

Health department nurses working under the direction of the health officer visited cases of communicable disease to instruct some member of the family concerning nursing care of the patient and to encourage placing the patient under medical care if no physician was in attendance. Practically no bedside nursing care was given. These nurses also assisted the health officer in the organization and operation of immunization clinics and, upon the request of the teacher, made inspections of school children.

The sanitation officer carried on a program of environmental sanitation which was largely directed toward the installation of sanitary excreta disposal facilities on all premises. In addition to this, he devoted part of his time to malaria control, especially to the maintenance of drainage ditches. He investigated reported cases of rabies in dogs and exercised some supervision over food-dispensing establishments and roadside semipublic water supplies. The control of milk and foods was largely a function of the State department of agricul-

ture. Some attention was given to screening of homes and to supervision of private water supplies. Public water-purification plants in the county-seat towns were operated by lay attendants under the technical supervision of the State health department.

The State health department made available consultant service of the State epidemiologist to assist in the diagnosis of obscure illnesses where there was some question of communicability, to investigate outbreaks of disease, and to help with the organization and administration of special disease-prevention campaigns. Periodic visits of State supervisors were made to the health unit to observe the work and to suggest possible changes in its program. The State provided free diagnostic laboratory service both to the health department and to the local private physicians. Certain biologicals were furnished by the State to the health department and to the local physicians at cost prices; also printed material of an educational character was available for free distribution.

Regulations for governing communicable diseases and environmental sanitation were prescribed by the State. The regulations applicable to communicable diseases underwent revision during the last month of the study. Those in force during the major part of the study period applied chiefly to quarantine and isolation. The revised regulations, aside from stating quarantine and isolation procedures to be followed, prescribed various other administrative measures to be carried out, such as investigation of source of infection, or concurrent and terminal disinfection. Prior to revision, the regulations for the more common communicable diseases were in brief as follows:

Diphtheria.—Isolation of case for 10 days, with release after 1 negative culture from the nose and throat; or release in less than 10 days with 2 successive negative nose and throat cultures; or release after 28 days if cultures were not taken. Quarantine of contacts under 15 years of age until release of case unless isolated on noninfected premises for 7 days and found to have negative nose and throat cultures.

Measles.—Isolation of case for at least 12 days after appearance of eruption; quarantine of exposed susceptible children for 14 days.

Scarlet fever.—Isolation of case for at least 21 days from date of eruption. Quarantine of contacts under 15 years of age for 7 days if residing on noninfected premises, otherwise quarantine until release of case.

Typhoid fever.—Treatment of discharges of infected persons in such manner as to prevent danger to any other person.

Whooping cough.—Requirement of cases to stay beyond 30 feet from any susceptible person until 28 days have passed. Observation of same restrictions by exposed susceptible persons until lapse of 14 days from time of exposure.

Certificates of deaths from all causes, including communicable diseases, were filed directly by physicians with local registrars, who in turn transmitted them at the end of each month to the State registrar of vital statistics. While this did not provide the local

health authorities with a current file of deaths from communicable diseases in the area, the State department of health did call to their attention any unusual number of deaths from a particular cause that might suggest an epidemic.

The State regulations provided that physicians should report promptly to the local health officer any cases of certain notifiable diseases under their care so that the prescribed regulatory measures might be instituted. Teachers were instructed to exclude from school all children showing evidence of skin eruptions, skin parasites, or communicable diseases, as well as children coming from homes where communicable diseases were known to exist, and to report them to the health officer for investigation before readmittance. Successful vaccination against smallpox was a prerequisite for school attendance. Placarding of premises was required for acute anterior poliomyelitis, diphtheria, meningococcus meningitis, scarlet fever, and smallpox.

PERFORMANCE

REPORTING PRACTICE

Many cases of communicable disease occurring in the Brunswick-Greenville area were not reported to the State. Evidence of this is presented in table 3, which lists the number of reported cases, the number of deaths, and the ratio of reported cases to deaths for several notifiable diseases for the two 5-year periods. The ratios in themselves indicate incomplete reporting: in the period 1926-30, tuberculosis had a ratio of 0.6, showing that fewer cases were reported than deaths; no cases of pellagra were reported although 15 deaths occurred; and the ratios of 6.5 for diphtheria and 2.5 for typhoid fever were far below those (13 and 8, respectively) suggested as desirable standards by the Committee on Administrative Practice of the American Public Health Association in the Appraisal Form for Rural Health Work (7). While the reporting practice was unsatisfactory in regard to completeness, it apparently had become less complete, as evinced by lower ratios for the later of the two 5-year periods. The lower ratio of cases to deaths might suggest that an increase in case fatality had occurred, but this is not an acceptable explanation in view of the generally mild character and declining mortality rates for most communicable diseases. In view of the figures presented in table 2 (which gives the number of cases of notifiable communicable diseases stated by the family informant to have occurred among the surveyed group of families in the preceding 12 months, the number of cases estimated for the entire bicounty population, and the number of cases reported to the State health department during a 12-month period approximating that covered by the survey), it appears that the

number of cases reported to the State health department was less than 10 percent of the number estimated to have occurred.

TABLE 3.—*Reported cases and deaths and ratio of reported cases to deaths for selected notifiable diseases for two 5-year periods, 1921-25 and 1926-30, in Brunswick and Greensville Counties*

Disease	1921-25			1926-30		
	Cases	Deaths	Ratio of cases to deaths	Cases	Deaths	Ratio of cases to deaths
Diarrhea and dysentery ¹	1, 236	104	11.9	355	75	4.7
Diphtheria.....	215	29	7.4	85	13	6.5
Malaria.....	1, 276	7	182.3	233	4	58.2
Measles.....	(?)	12	-----	(?)	12	-----
Pellagra.....	0	14	0	0	15	0
Scarlet fever.....	78	2	38.0	25	0	-----
Smallpox.....	28	0	-----	5	0	-----
Tuberculosis.....	158	178	.9	111	178	.6
Typhoid fever.....	151	21	7.2	40	16	2.5
Whooping cough.....	(?)	39	-----	(?)	17	-----

¹ Diarrhea and dysentery not reported until July 1923.

² No data available on number of reported cases.

Part of the incomplete reporting of notifiable diseases to the State health department may be attributed to the fact that the local health department did not report to the State all cases coming to its knowledge. In a period of 8 months, members of the local health department staff visited 74 cases of notifiable acute communicable disease, but reports for only 47 of this number were received by the State. A great share of incomplete case reporting, however, was related to absence of medical care. Most cases of which the State health department was notified were those attended by physicians; but the majority of the cases did not have a medical attendant and, consequently, were not reported. Table 4, which lists 561 cases of illness from notifiable communicable diseases found in the surveyed sample of families, shows that only 254, or approximately 45 percent of the total number, were attended by a private physician; consequently, notification of a high percentage of cases which occurred within the area is hardly to be expected.

While practically all morbidity reporting from the Brunswick-Greensville area came from private physicians, they reported but a small percentage of the cases they attended. It is estimated that in the entire bicounty population about 1,500 communicable disease cases had a physician in attendance during the period covered by the family survey; yet in approximately the same period only 330 cases were reported to the State, or about 22 percent of the number which presumably physicians could have reported.

TABLE 4.—*Total number of cases of notifiable acute communicable disease, the number attended by private physicians, and the number seen by the members of the health department staff, according to the statement of the family informant in the surveyed sample of families in Brunswick and Greenville Counties*

Disease	Number of cases reported in surveyed families	Number of cases attended by private physician	Number of cases seen by member of health-department staff	Disease	Number of cases reported in surveyed families	Number of cases attended by private physician	Number of cases seen by member of health-department staff
Total for the diseases listed	561	254	30	Malaria.....	13	10	0
Conjunctivitis.....	12	6	0	Measles.....	53	11	2
Chicken pox.....	46	11	0	Mumps.....	103	18	0
Diarrhea and dysentery.....	80	45	1	Pneumonia.....	23	22	1
Diphtheria.....	19	19	14	Scarlet fever.....	10	8	8
Influenza.....	155	82	2	Syphilis.....	2	2	0
				Typhoid fever.....	2	2	1
				Typhus fever.....	1	1	0
				Whooping cough.....	42	17	1

Although records of only about 10 percent of all notifiable cases of acute communicable disease which occurred within the two counties and only 22 percent of cases with a medical attendant were transmitted to the State health department, much higher percentages than these were reported for cases of certain diseases. On the basis of information obtained from the surveyed sample of families and the records of the State, it is estimated that for a group of diseases against which control measures were emphasized, namely, diphtheria, meningitis, poliomyelitis, scarlet fever, and typhoid fever, about 45 percent of the cases were reported. About 30 percent of diphtheria and 45 percent of scarlet fever cases are estimated to have been reported. Typhoid fever cases presumably were very well reported; 2 cases were found in the surveyed sample of families comprising one-sixth of the total population, and 21 cases of this endemic disease were reported to the State. The percentages of diphtheria and scarlet fever cases reported from Brunswick and Greenville Counties are low in comparison with those found for a group of 68 counties² located in the southeastern part of the United States and having full-time health departments. The percentages of cases reported for diphtheria, scarlet fever, and typhoid fever were 84, 72, and 73, respectively, for the 68 counties.

MEDICAL CARE

Approximately 45 percent of the cases of notifiable communicable disease found in the family survey were attended by a private physician. In general, cases which had a medical attendant represented the more serious types of communicable disease. Ninety percent of

² Unpublished data on reporting of communicable diseases for 68 counties, collected in 1930 by State and local health authorities in cooperation with the U. S. Public Health Service. Data supplied by Division of Sanitary Reports and Statistics, U. S. Public Health Service.

the illnesses attributed to diphtheria, malaria, pneumonia, scarlet fever, typhoid fever, and typhus fever were attended by a physician, while only 25 percent of those attributed to the common communicable diseases of childhood, such as conjunctivitis (pinkeye), chicken pox, measles, mumps, and whooping cough were observed by a physician.

CONTROL MEASURES

The measures which the health department instituted for control of communicable diseases were studied in detail for a period of 8 months with a view to determining how the health department first came into contact with the cases, what control measures were instituted for different diseases, and how each member of the health department participated in the program. This period, roughly speaking, covered the autumn, winter, and spring seasons, when communicable diseases normally are most prevalent. The analysis of administrative-control services is confined to the period of 8 months unless otherwise stated.

NUMBER OF PATIENTS VISITED

Members of the health department staff visited 159 communicable disease patients; 97 of these were diagnosed cases of which 74 were notifiable in character, while the remaining 62 patients represented persons who had been exposed to a case or were suspected of having a communicable disease. The patients represented 81 households; one of the households came under health department supervision at two different times and may therefore be counted twice. Table 5 lists the number of acute communicable disease cases visited in each county by members of the staff in a period of 8 months, also the number which was reported to the State health department.

During the 8 months, 375 cases of notifiable acute communicable disease were reported to the State from the Brunswick-Greenville area. Members of the health department staff visited 47 of this number, or about 12.5 percent of those reported. Of the cases brought to the attention of the State, 319 were reported as influenza or pneumonia, diseases over which health departments ordinarily do not attempt to exercise control. Excluding influenza and pneumonia from consideration, there were 56 cases covering 13 diseases reported to the State, of which number 38, or 68 percent, were visited by health department workers. In contrast, 10 percent of cases from the same 13 diseases found in the surveyed sample of families were visited by health department workers. In 8 months 31 cases were reported to the State for the group of diseases (diphtheria, meningitis, poliomyelitis, scarlet fever, and typhoid fever) which received special attention from the health department. Members of the staff visited 29 of the 31 cases (94 percent) as well as 6 others which were not reported to the State. As already pointed out, 74 notifiable cases

were visited by health department workers, but only 47 of the cases were reported to the State. As shown in table 5, there were 27 cases which were visited but unreported to the State as follows: 1 case of chicken pox, 1 case of diphtheria, 3 cases of gonorrhoea, 3 cases of scarlet fever, 4 cases of syphilis, 2 cases of typhoid fever, and 13 cases of whooping cough.

Most of the cases visited by the health officer or health department nurses, as shown by the family survey, were patients attended by a physician. Among 254 cases stated by the family informant to have been attended by a physician, 26, or about 10 percent, were reported to have had visits from either the health officer or nurse, but only 4 of 307 cases unattended by a physician received service from the health department.

TABLE 5.—Number of cases of communicable disease in Brunswick and Greenville Counties visited by members of health department staff and number of cases reported to the State health department in a period of 8 months

Disease	Number of communicable disease cases					
	Visited by members of health department staff			Reported to State health department		
	County			County		
	Brunswick	Greenville	Total	Brunswick	Greenville	Total
Notifiable:						
Chicken pox.....	2	2	4	2	1	3
Diarrhea and dysentery.....				5		5
Diphtheria.....	2	6	8	2	5	7
Gonorrhoea.....		3	3	1		1
Influenza.....		9	9	221	71	292
Malaria.....					10	10
Measles.....	2		2	2		2
Meningitis.....	1		1	1		1
Pneumonia.....				21	6	27
Pollomyelitis.....	1		1	1		1
Scarlet fever.....	18		18	15	1	16
Syphilis.....	2	3	5	1		1
Typhoid fever.....	3	4	7	4	2	6
Typhus fever.....	1	1	2	1	1	2
Whooping cough.....	8	6	14	1		1
Subtotal.....	40	34	74	278	97	375
Nonnotifiable:						
Scabies and impetigo.....	12	10	22			
Vincent's angina.....		1	1			
Total.....	52	45	97	278	97	375

KNOWLEDGE OF PATIENTS

Physicians most frequently were responsible for informing the health department of households having communicable disease patients. Among 82 households visited by a member of the staff, sources of first information were as follows: Physicians, 38; members of households, 20; teachers, 8; neighbors, 5; visits to households, 6; and school inspections, 5. Among 46 households having patients

subject to quarantine or isolation, physicians were the source of first information for 34, while in 19 of 36 households in which patients were not subject to restriction the health department was first notified by some member of the family. It is of interest to note that physicians transmitted first knowledge of the case to the health department for only 4 households in which the patient was not subject to quarantine or isolation restrictions, and that a member of the family first informed the health department of only 1 of 46 households subject to such restrictions.

REGULATORY MEASURES INSTITUTED BY HEALTH DEPARTMENT

Reporting of cases by physicians to the State was done through the local health department. Such cases as were reported provided the health department an opportunity of investigating the cases and carrying out whatever measures were prescribed. The number of households represented by each communicable disease seen by the health department and the regulatory measures employed in each are shown in table 6.

TABLE 6.—Number of households in which communicable-disease patients were under health department supervision and the regulatory measures which were employed

Type of patient and regulatory measures employed	Number of households and diseases for which patients were seen										
	Diphtheria	Measles	Meningitis	Poliomyelitis	Scarlet fever	Chicken pox	Typhoid fever	Whooping cough	Scabies or impetigo	Other	Total
Case.....	8	2	1	1	15	4	5	5	9	14	64
Contact but no case.....	2				2		1				5
Suspect.....	2						2		1	8	13
Total.....	12	2	1	1	17	4	8	5	10	22	82
Quarantined because of case.....	8	2	1	1	15	1					28
Quarantined because of contact.....	2				2						4
Isolation of case.....							5		3		8
No restriction.....	2					8	3	5	7	22	42
Total.....	12	2	1	1	17	4	8	5	10	22	82

¹ Case was reported as smallpox.

Of the 82 households seen by members of the health department staff, 32 were placed under quarantine restrictions for having either a case of or contact with communicable disease. Among this latter number 17 were quarantined for scarlet fever, 10 for diphtheria, 2 for measles, 1 for meningococcus meningitis, 1 for poliomyelitis, and 1 for a case finally diagnosed as chicken pox which had been reported as smallpox by the attending physician. Inspection of children in schools for transmissible infectious or parasitic skin diseases led to temporary exclusion from school of children in three families because of scabies. Children with either impetigo or scabies under satisfac-

tory treatment were permitted to continue school attendance. Seven typhoid fever cases in five households were placed under isolation restrictions. The nurses visited five households having one or more cases of whooping cough, but the records did not clearly state what control measures were instituted. All together, patients from 40 households were subjected to the restrictions of quarantine, isolation, or exclusion from school. Among the remaining communicable disease households the health department supervision was limited to instruction regarding measures to be instituted for the care of the patient and for the control of the disease.

PARTICIPATION IN PROGRAM

All members of the health-department staff participated in the control program. It was the stated policy of the health officer to visit all cases of typhoid fever, diphtheria, scarlet fever, measles, meningitis, and poliomyelitis which came to his attention. The policy was well carried out; insofar as the records showed, all such cases, except 2, known to the health department were visited by the health officer. The information obtained from the family survey also indicated that the policy was closely followed. The health officer also visited patients with unusual diseases, such as endemic typhus fever or Rocky Mountain spotted fever, as well as patients having any of the common communicable diseases in which there was some special problem, usually that of diagnosis, for which his assistance was sought. Occasionally the nurses visited patients to carry out control measures directed by the health officer. In general, however, the patients seen by the nurses were those they discovered while visiting other members of the family. Of the 159 communicable disease patients, 108 were visited by the health officer and 69 by the 2 nurses. There were 77 patients placed under quarantine or isolation; the health officer visited 59 of these, and the nurses saw 23.

Most of the sanitation officer's work was related to general sanitation measures, an analysis of which has already been published (2). His participation in direct control measures was confined entirely to the problem of rabies. Five dogs having rabies or suspected of having rabies were reported to the health department, and in each instance the sanitation officer traced the animal and placed it under observation, or prepared the head for shipment to the State laboratory if symptoms were present.

EPIDEMIOLOGICAL INVESTIGATIONS

Epidemiological case histories, spot maps, and chronological charts were not kept by the health department. Investigations of cases were made by the health officer, but these were primarily directed

toward verification of diagnosis and obtaining specimens for laboratory analysis.

The following laboratory specimens were collected for diagnosis: Throat cultures from 8 diphtheria cases and 1 suspect, and from 1 unspecified throat condition; blood for agglutination tests on 3 typhoid fever cases, 1 typhoid suspect, and 2 typhus fever cases; blood for Wassermann tests on 1 case of syphilis and 1 suspect; blood smear for 1 malaria suspect; and spinal fluid from 1 meningitis case. Laboratory specimens to govern release of cases from isolation were obtained for diphtheria and typhoid fever cases. A total of 25 diphtheria throat cultures was collected from cases; 7 of the cultures were obtained on the first visit to the patient, the other 18 cultures were collected presumably for the purpose of determining whether the patient might be released from isolation. Of the 8 cases of diphtheria visited, 2 were cultured once, and from 2 to 8 specimens were collected from the other 6. Fifteen diphtheria contacts provided 25 cultures. One stool specimen was collected from each of 5 typhoid fever cases. No laboratory specimens were collected from 2 typhoid fever cases ending in fatalities.

Diagnosis frequently involved consultation service to the attending physician, this service being rendered in 18 instances. Assistance was obtained from the epidemiologist of the State health department on 5 occasions for the diagnosis of cases reported as poliomyelitis, meningitis, typhus fever, and smallpox. Attempts to locate the source of infection were made usually in connection with diphtheria. Child contacts of 4 cases were examined and cultures taken. A healthy carrier was found for each of 2 cases. The source of infection was also sought for a case of typhoid fever in a family group which had experienced this disease. Inspections were made of the water supply and excreta disposal facilities at each household having a case of typhoid fever. Children of 2 families known to have been in contact with scarlet fever were investigated and placed under quarantine.

VISITS

Return visits were made either by the health officer or nurse to all households having patients placed under quarantine or isolation, except 5, 1 with a case of diphtheria, 1 with a case of measles, and 3 with patients quarantined for scarlet fever. All cases of communicable disease subjected to health department isolation regulations received return visits except 4; the average number of visits to cases of this type was 2.1, and to cases of diseases which received the special attention of the health department, i. e., cases of diphtheria, meningitis, poliomyelitis, scarlet fever, and typhoid fever, an average of 2.8 visits was made. Diphtheria and typhoid fever cases received

an average of 3.6 visits. The average for all cases was 2.1; but if the minor skin conditions, such as scabies and impetigo, are excluded, the average number of visits was 2.3. The maximum number of visits made to a case was to a patient with diphtheria who received 8 calls.

Approximately 44 percent of all communicable disease cases seen by health department workers received but 1 visit, 29 percent 2 visits, 12 percent 3 visits, and 14 percent 4 or more visits. A total of 205 visits was made to the 97 cases and 120 visits to 62 contacts and suspects.

The interval between first and last visits to quarantined households which received more than 1 visit varied from 2 to 39 days, with a median of 10 days. All intervals were 21 days or less except for three households. Two of these had diphtheria carriers with 34- and 39-day intervals between first contact and last. The third household was one in which there developed a secondary case of scarlet fever on the sixteenth day of quarantine; the final visit occurred 38 days following the initial one. The last visit was often made a few days prior to the termination of quarantine and was usually for the purpose of determining the condition of the patient. However, in 2 instances where fatalities occurred, instructions regarding terminal disinfection were specifically mentioned as the purpose of the last visit. The health department nurses were encouraged to give general advice and instruction in communicable disease households regarding concurrent disinfection, but demonstrations of isolation technique were not given so far as the records show. Visits were made to arrange for active immunization of contacts and neighbors in connection with cases of typhoid fever in 5 households and in 1 household having diphtheria. For many visits the services rendered were limited to general instruction regarding quarantine and isolation. Sixty visits, however, were in connection with medical care of patients, 20 being directed toward obtaining medical care for patients without an attendant, while 40 involved carrying out instructions given by the family doctor.

IMMUNIZATION

From the viewpoint of the number of individuals served, immunization against diphtheria, smallpox, and typhoid fever comprised the principal part of the communicable disease control program.

PERFORMANCE DURING STUDY PERIOD

A total of 3,391 persons was served by the health department in the interest of immunization, including tests for immunity, during the 8 months under study. Certain of these individuals received

more than one type of immunization service and are counted accordingly in table 7, which shows the number of individuals receiving each type of service. Diphtheria toxoid was given to 662 persons; the Schick test was given to 2,664; anti-typhoid-fever inoculation was given to 168 individuals, but the dosage to 57 was incomplete; and smallpox vaccine was given to 1,030 persons. Both the health officer and nurse participated in this work, 96 percent of which was done in schools.

TABLE 7.—*Total immunization service and number of services per 1,000 individuals by the Brunswick-Greenville health department staff in an 8-month period*

Color	Popu- lation in counties	Total services		Immunization services and number per 1,000							
				Schick tests		Diphtheria toxoid		Smallpox vaccine		Typhoid vaccine	
		Num- ber	Num- ber per 1,000	Num- ber	Num- ber per 1,000	Num- ber	Num- ber per 1,000	Num- ber	Num- ber per 1,000	Num- ber	Num- ber per 1,000
Total.....	33,874	4,524	133.7	2,664	78.7	662	19.6	1,030	30.4	168	5.0
White.....	14,253	1,410	99.1	913	64.1	246	17.3	213	15.0	38	2.7
Colored.....	19,621	3,114	158.8	1,751	89.4	416	21.2	817	41.6	130	6.6

¹ The total of 4,524 represents service to 3,391 individuals who in many cases received 2 or more services.

During the school year which preceded the period of this report, diphtheria immunization was emphasized. In the following school term, Schick testing was emphasized and toxoid was given to the positive reactors and to a few first grade pupils who had not been treated previously; consequently, most of the diphtheria control service appears in the form of Schick testing. Those Schick tested were almost entirely confined to the school-age group.

Table 8 lists the estimated population in certain age groups with the percentage of individuals in each group that received Schick tests, diphtheria toxoid, and smallpox vaccination during the 8-month period of the study. Among the school-age group approximately 27 percent received a Schick test, 5 percent toxoid, and 10 percent smallpox vaccination. Among the preschool children about 2 percent were Schick tested, 3 percent given toxoid, and 0.7 percent vaccinated against smallpox. Diphtheria toxoid was given to approximately 4 percent of the infants, but no smallpox vaccinations were recorded in this age group. No attempt was made to Schick test infants.

TABLE 8.—*Percentage of persons in certain age groups given immunization services by the Brunswick-Greenville health department staff during an 8-month period*

Age group	Population (estimated)	Percent of individuals in specified age groups receiving services		
		Schick tests	Diphtheria toxoid	Smallpox vaccination
Total.....	33,874	7.9	2.0	3.0
Under 1 year.....	806	0	3.7	0
1-5 years.....	4,402	1.8	2.7	.7
6-15 years.....	9,564	26.8	5.3	10.5
16 years and over.....	19,102	0	0	0

PERFORMANCE IN OTHER YEARS AND IN OTHER AREAS

Because of the chronology of the studies in the Brunswick-Greenville area, we have in effect a measure of the amount of immunization done during 2 previous years, one covered by nursing records (4) and the other by the family survey (3), both of which preceded the 8 months covering the analysis of the work of the department as a whole. Although the schedules for a few of the surveyed families cover a period extending into the nursing study year, the 2 sources of information provide data which essentially portray performance for 2 different years. It is emphasized that the immunization rates for the nursing year are based on a record of health department activities in which the nurses participated, whereas those for the survey year represent service only insofar as the household informant was able to recall that it had been received by members of the family. While the person interviewed by the family canvasser may have failed to remember part of the immunization service received by members of the household, it is believed that the picture presented in each instance describes what may be regarded as approximately the total service rendered. The immunization rates per 1,000 individuals for the 2 years are presented in table 9. The survey period perhaps represents a more normal year than that covered by the nursing records in that there was no special program of immunization being carried on during that period, while during the year of the nursing records a diphtheria prevention campaign was conducted by the health department. It may be seen that the total immunization rate was higher for the nursing year, 137, than for the survey period, 89.

TABLE 9.—*Immunization rates against certain communicable diseases in Brunswick and Greenville Counties for two 12-month periods: Records of nursing work and survey of families*

Type of immunization	Annual immunization rates per 1,000 individuals against specified disease					
	Nursing records			Family survey		
	Total	White	Colored	Total	White	Colored
Total.....	136.5	110.5	155.3	89.2	98.7	82.2
Diphtheria.....	67.4	51.3	79.0	30.2	27.0	32.4
Typhoid fever.....	28.4	43.2	17.6	42.5	48.5	35.2
Smallpox.....	40.7	16.0	58.7	16.5	23.2	11.6

The immunization rate for white individuals was 99 for the survey period and 110 for the nursing year, while for the colored population the rates were 82 for the former and 155 for the latter period, indicating a shift of emphasis on immunization in the nursing year from white to colored individuals. Immunization rates against the different diseases considered show that more than twice as many individuals were immunized against diphtheria and smallpox in the nursing year as in the survey period, while the typhoid immunization rate was higher during the survey year.

Data are available from which annual rates may be computed to express the amount of immunization done in counties in different parts of the United States. These data include the number of immunizations done (a) in rural areas of the United States studied by the Committee on the Costs of Medical Care,³ (b) in Rutherford County, Tenn. (8); and (c) in 62 organized counties of 6 South Atlantic or East South Central States where demonstration projects on rural health were conducted by State and local health authorities in cooperation with the United States Public Health Service (9). Immunization rates computed for the foregoing areas are given in table 10. The periods covered by the rates antedate the time at which data were collected for Brunswick and Greenville Counties, but they are the nearest for which comparable figures could be found. It is recognized that there may be differences in definitions of immunizations and in the method by which the data were collected. The table shows that immunization rates for Brunswick and Greenville Counties exceeded those for other sections except Rutherford County, which had a much larger health department staff. The 62 counties in the South Atlantic and East South Central groups of States were served for the most part by organizations having relatively small staffs, while the areas in which the rural families studied by the Committee

³ Unpublished data for rural families collected by the Committee on the Costs of Medical Care supplied by the Office of Statistical Investigations of the United States Public Health Service.

on the Costs of Medical Care resided may or may not have been served by county health departments.

TABLE 10.—*Immunization rates against certain communicable diseases in Brunswick and Greenville Counties, Va., and certain other population groups in the United States*

	Immunization rates per 1,000 individuals			
	Total	Smallpox	Diphtheria	Typhoid fever
Rutherford County, Tenn. ¹	196	61	44	91
Brunswick and Greenville Counties, Va. ¹	113	29	34	36
62 organized counties in 6 States in the South Atlantic and East South Central States ²	106	26	22	58
Rural families ⁴	42	26	13	3

¹ Average annual immunization rates for years 1927-28.

² Average annual immunization rates for survey and nursing study years.

³ Average annual immunization rates for fiscal years 1928-29, 1929-30.

⁴ Rural families studied by the Committee on the Costs of Medical Care.

The health department rendered most of the immunization service in Brunswick and Greenville Counties. Only 39 immunizations, or 8 percent of those reported in the sample of families, were done by private physicians. Furthermore, a study of individuals receiving immunization service from private physicians revealed that 11 of these 39 immunizations were typhoid fever immunizations performed by physicians to members of their own families. Six diphtheria immunizations by private physicians were reported; these were in a home where there had been 2 cases of diphtheria. This would indicate that immunization as a preventive measure in the general population was largely an activity of the local health department.

IMMUNITY STATUS

Information regarding certain immunization services received at any time by individuals under 16 years of age was obtained from the survey of 1,009 families. This information is used to provide an index of the immunity status of the population, although it is recognized that in many instances the service may not have produced immunity, also that an immunity may have developed in some without any service having been rendered.

It was found that approximately 55 percent of the individuals under 16 years of age in both counties had been vaccinated at some time against smallpox. Slightly less than 10 percent of those in Brunswick County and 20 percent of those in Greenville County had received typhoid immunizations. A somewhat higher percentage had received diphtheria immunizations in Brunswick County, the percentage being 49 in that county and 42 in Greenville. The disease incidence as measured by reported deaths showed typhoid fever to be a problem in Greenville County particularly, while

diphtheria was especially important as a problem in Brunswick County. The figures on immunity status suggest that special emphasis had been placed by the health department on the immunization of individuals in areas where the disease was most prevalent.

The percentages of white and colored individuals in certain age groups having had immunizing treatments against smallpox, typhoid fever, and diphtheria are given in table 11. It may be seen that higher percentages of white than colored reported treatment. With the exception of diphtheria immunizations, few treatments were reported as given to individuals under 6 years of age. Nearly 90 percent of the white children of school age (6-15 years) and about 80 percent of the colored had been vaccinated against smallpox, while 27 percent of the white and 13 percent of the colored had received typhoid immunizations. Diphtheria immunizations had been given to 32 percent of the white preschool children (under 6 years of age) and to about 10 percent of the colored in the same age group, while in the school age group nearly 70 percent of the white children and about 55 percent of the colored had received this protective treatment.

TABLE 11.—Percentage of persons in surveyed sample of families reported as having been immunized at some time against certain communicable diseases in Brunswick and Greenville Counties

Age group	Color	Population	Percent immunized against specified disease		
			Smallpox	Typhoid	Diphtheria
Under 6 years.....	White.....	335	1.5	6.4	32.5
	Colored.....	472	2.6	1.9	9.7
6 to 15 years.....	White.....	621	89.4	26.8	68.6
	Colored.....	869	79.4	12.7	55.4

The relatively higher percentage of white than colored individuals under 16 years of age having been immunized at some time against smallpox, typhoid fever, and diphtheria shows that early immunization programs were particularly active among white children. That this emphasis subsequently changed to the colored is indicated by data already presented. During the survey year the immunization rate for colored exceeded that for white children for diphtheria; during the nursing year it was higher for both diphtheria and smallpox; while for the analysis of communicable disease activities for the 8 months covered by this paper, it was higher for all three diseases, diphtheria, typhoid fever, and smallpox.

The Committee on Medical Care for Children of the White House Conference on Child Health and Protection (10) found 7 percent of the preschool children in the rural areas included in their survey had received smallpox vaccinations. In Brunswick and Greenville

Counties the percentages vaccinated in this age group for both white and colored children were far below the findings by the committee mentioned. The committee further found that 18 percent of the preschool children in their sample had been immunized against diphtheria. The performance in the Brunswick-Greenville area for the group of white children was 32 percent, which is considerably better than was found by the committee, but the percentage of colored children immunized in this age group was only 9 percent. The committee's report points out that "there is a strong presumption at least that the rural results are somewhat more favorable than would be the case if the selection of families had been purely on a random basis." In view of this statement, perhaps the performance in Brunswick and Greenville Counties was above the average for the rural part of the United States. It should be noted, however, that Brunswick and Greenville Counties were within the jurisdiction of a full-time health department in operation for a number of years and devoting a large part of its energies to an immunization program.

As a final comparison the percentage of children of school age in Brunswick and Greenville Counties who had been immunized is compared in table 12 with that reported for Rutherford County, Tenn. (8), for the rural part of Clarke County, Ga. (11), for Marion County, Oreg. (12), and Cattaraugus County, N. Y. (13). In each of these areas an intensive health demonstration had been carried on for a number of years. It should be mentioned that the basis upon which the percentages are computed may not be strictly comparable for all the areas. There had been little or no typhoid immunization in Marion County, Oreg., or in Cattaraugus County, N. Y., as the disease was not a major problem in those areas. No records on typhoid immunizations were available for Clarke County, Ga. On the basis of these figures it may be noted that the immunity status of the school population in Brunswick and Greenville Counties compares very favorably with the immunity status in the demonstration areas.

TABLE 12.—Percentage of school children reported as having been immunized against certain communicable diseases at some time previous to date of inquiry in Brunswick and Greenville Counties and in certain organized counties in the United States

	Percent of school children immunized in specified areas		
	Smallpox	Typhoid fever	Diphtheria
Brunswick and Greenville Counties.....	83.6	18.7	61.1
Cattaraugus County, N. Y.....	15.0	(¹)	65.1
Child health demonstration areas:			
Rutherford County, Tenn.....	75.5	47.5	55.1
Rural part Clarke County, Ga.....	67.0	(¹)	55.0
Marion County, Oreg.....	57.0	(¹)	61.0

¹ No figures available.

SUMMARY

An analysis has been presented of the activities of a rural health department in relation to communicable disease control.

Information obtained from a surveyed sample of one-sixth of the population on the incidence of all notifiable acute communicable diseases for a 12-month period compared with reported cases to the State for the calendar year most nearly approximating the period of the survey showed that the number of cases reported to the State was only about 10 percent of the total cases estimated to have occurred in the area. For diphtheria, meningitis, poliomyelitis, scarlet fever, and typhoid fever, for which diseases control measures were emphasized by the local health department, the number of cases reported to the State was about 45 percent of the number estimated to have occurred.

In an 8-month period for which the activities of the health department were analyzed, members of the staff visited 68 percent of the reported cases of notifiable disease, exclusive of pneumonia and influenza. In the same period they visited 94 percent of the cases of diphtheria, meningitis, poliomyelitis, scarlet fever, and typhoid fever that were reported to the health department. Cases were also visited which were not reported to the State so that the total number of cases visited exceeded the number reported from the area, provided influenza and pneumonia are excluded from consideration. Health department workers visited 159 cases, contacts, or suspects of notifiable diseases during the 8-month period; 69 of these were visited by the health department nurse and 108 by the health officer.

From the standpoint of number of persons served, most of the control services during the 8-month period consisted of Schick tests and immunization against diphtheria, smallpox, and typhoid fever. The immunization rates per 1,000 persons were 19.6 for diphtheria, 30.4 for smallpox, and 5.0 for typhoid fever, while 78.7 Schick tests were given per 1,000 persons. The bulk of the work was done in the school-age group; 26.8 percent of children from 6-15 years of age were Schick tested, about 5 percent received diphtheria immunization, and 10 percent were vaccinated against smallpox. Immunization rates for two preceding 12-month periods indicated that even proportionately more immunization work was done for the 2 years prior to the 8-month period here analyzed. The immunity status of individuals under 16 years of age at the time of the family survey which antedated the period of the 8-month analysis by approximately 2 years indicated that a high percentage of school children at that time had already received immunizations, especially against diphtheria and smallpox. With one exception the percentages of children from 6 to 15 years of age immunized against diphtheria and smallpox

were higher in the Brunswick-Greenville area than in any one of 4 demonstration areas for which data are presented.

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PARAGUAY CREATES NATIONAL MINISTRY OF HEALTH

On June 17, 1936, the Provisional President of the Republic of Paraguay, under the authority of a plebiscitary decree, created a National Ministry of Public Health, with Dr. Pedro Duarte Ortellado in charge. The Ministry carries a portfolio of equal rank with the other cabinet Ministries established by the Constitution of 1870. The decree states that the new Ministry is established in view of the fact "That the efficacious defense of the health of the people is one of the first duties of the state * * * to the end of aiding the well-being of the inhabitants of the Republic and the increase of the economic power of the Nation", and "That the organization of sanitary services ought to respond to a technical and scientific administration of the hierarchy and authority necessary to comply with the far-reaching commission that it enjoys."

HISTORY OF COUNTY HEALTH ORGANIZATIONS IN THE UNITED STATES, 1908-33

The United States Public Health Service has recently published a report on the history and development of county health organizations in the United States.¹ All persons interested in county health departments should welcome the appearance of this bulletin, which is the first comprehensive account of a development in public health administration that is perhaps the most significant of the present century.

The factual material presented in the bulletin deals very largely with personnel and budget. With these objective data the authors, Dr. John A. Ferrell and Pauline A. Mead, have outlined the experience of the health department in each county which has established an organized health service.

Perhaps the most significant fact in this history of county health departments is that the movement began in counties widely separated from each other geographically and presenting different problems. The suburban problems around Louisville, Ky., were approached from a county unit point of view for the first time in 1908. Yakima County, Wash., established a health department in 1911 for the purpose of controlling typhoid fever, which was conveyed by polluted drinking water taken from the irrigation ditches. During the same year the schools of Guilford, N. C., induced the county authorities to make county-wide provision for the health of school children. Shortly thereafter, Robeson County, N. C., adopted the county health department form of organization to combat hookworm infestation. From these beginnings the movement extended to all sections of the United States.

During the period under consideration (1908-33), 754 counties established health departments conforming to the definition used in this bulletin. These counties are distributed over 38 States. At the close of 1933 the service was being maintained in 524 counties. The largest number of failures occurred in 1932 and 1933, years of greatest financial distress.

Prior to 1916 the counties and contained cities financed the health departments and have continued to bear the largest share of the expense. Since that year, subsidy has been an integral part of the supporting financial structure. The States as a group rank next as a source of funds. The United States Public Health Service and the Rockefeller Foundation are, from the standpoint of grants in aid, the most important extra-State agencies.

¹ History of county health organizations in the United States, 1908-33. Compiled by John A. Ferrell, M. D., Dr. P. H., associate director, and Pauline A. Mead, B. Sc. in hygiene, statistician, international health division of the Rockefeller Foundation. Public Health Bulletin No. 222. Government Printing Office, Washington, D. C. 469 pp. Price, 50 cents.

Practical health officers, as well as students of health administration, will be interested especially in the detailed figures regarding personnel and budget. These are given in the bulletin for every county during each year organized health service was maintained. Financial data also are summarized by States and by agencies contributing to the budgets. The more significant trends in financial structure and in patterns of personnel are illustrated graphically.

It is fortunate indeed that the basic records supporting this splendid history of county health organization should have been preserved. Another fortuitous circumstance is to be found in the fact that the two persons most prominently identified with the movement from its beginning should have participated in the preparation of the bulletin. Dr. John A. Ferrell, the senior author, contributes his experience, which is based on personal contact with the movement from its very inception. Dr. L. L. Lumsden, the other pioneer in county health work, supplies one chapter on the early history of typhoid fever control measures in rural areas. These two sanitarians, one seeking to eradicate hookworm disease and the other concerned with typhoid fever control measures, evolved in the county health department not only a mechanism for preventing these diseases but one for supplying other types of health service to rural areas.

DEATHS DURING WEEK ENDED JULY 4, 1936

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended July 4, 1936	Corresponding week, 1935
Data from 86 large cities of the United States:		
Total deaths.....	7,543	7,323
Deaths per 1,000 population, annual basis.....	10.5	10.2
Deaths under 1 year of age.....	477	481
Deaths under 1 year of age per 1,000 estimated live births.....	43	44
Deaths per 1,000 population, annual basis, first 27 weeks of year.....	12.8	12.1
Data from industrial insurance companies:		
Policies in force.....	68,517,742	67,920,275
Number of death claims.....	12,007	9,311
Death claims per 1,000 policies in force, annual rate.....	9.2	7.1
Death claims per 1,000 policies, first 27 weeks of year, annual rate.....	10.5	10.3

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended July 11, 1936, and July 13, 1935

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended July 11, 1936, and July 13, 1935

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended July 11, 1936	Week ended July 13, 1935	Week ended July 11, 1936	Week ended July 13, 1935	Week ended July 11, 1936	Week ended July 13, 1935	Week ended July 11, 1936	Week ended July 13, 1935
New England States:								
Maine.....		1			131	211	0	1
New Hampshire.....					3	1	0	0
Vermont.....					12	37	0	0
Massachusetts.....	12	9			377	195	0	3
Rhode Island.....	1	2			17	123	0	0
Connecticut.....	1	9		1	53	167	1	0
Middle Atlantic States:								
New York.....	40	29	12	13	1,066	1,382	11	10
New Jersey.....	7	9	9	2	321	557	3	2
Pennsylvania ¹	15	17			287	514	3	1
East North Central States:								
Ohio.....	13	16	7	7	54	727	3	10
Indiana.....	3	9	6	8	3	27	0	2
Illinois ²	41	26	24	18	21	414	5	12
Michigan.....	15	11	1		34	697	2	3
Wisconsin.....	3	3	4	17	91	739	2	4
West North Central States:								
Minnesota.....	2	4	11	1	53	68	0	1
Iowa.....	5	4			2	15	0	2
Missouri.....	6	19	27	27	16	35	3	1
North Dakota.....		1		9		8	0	1
South Dakota.....	2	6			3	8	0	0
Nebraska.....	6	2			3	25	1	0
Kansas.....	12	6	4	8	10	51	1	2
South Atlantic States:								
Delaware.....	1	2				19	0	0
Maryland ³	3	10	1		124	17	3	4
District of Columbia.....	2	15			51	10	2	1
Virginia ²	7	6			60	60	2	5
West Virginia.....	1	12	4	16	20	28	5	1
North Carolina.....	13	13	1		12	22	7	2
South Carolina.....	3		36	35	5	3	0	1
Georgia ⁴	5	9					2	0
Florida.....	2	3		1	4	2	4	0

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended July 11, 1936, and July 13, 1935—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended July 11, 1936	Week ended July 13, 1935	Week ended July 11, 1936	Week ended July 13, 1935	Week ended July 11, 1936	Week ended July 13, 1935	Week ended July 11, 1936	Week ended July 13, 1935
East South Central States:								
Kentucky.....	4	5	1	4	7	40	4	1
Tennessee.....	2	3	9	5	8	4	3	2
Alabama ¹	11	19	2	15	2	10	2	0
Mississippi ¹	8	2					0	1
West South Central States:								
Arkansas.....	6	1	4	3		4	1	2
Louisiana.....	7	25	18	10	9	15	0	1
Oklahoma ¹	1	3	7	5		3	1	0
Texas ¹	11	20	67	6	76	16	3	2
Mountain States:								
Montana.....		6	1	2	2	35	0	0
Idaho ¹	1		1		5	3	0	0
Wyoming.....					3	2	0	0
Colorado ¹	1	3			12	20	0	3
New Mexico.....		2	2		5	3	0	2
Arizona.....	1	1	8		37	4	0	0
Utah ¹	1				22		0	0
Pacific States:								
Washington.....		1			92	116	0	0
Oregon.....		1	1	4	15	41	1	1
California.....	25	20	116	25	323	418	4	3
Total.....	300	365	374	232	3,451	6,896	79	87
First 28 weeks of year.....	13,685	16,243	140,773	102,780	262,949	682,857	5,615	3,795

Division and State	Polliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended July 11, 1936	Week ended July 13, 1935	Week ended July 11, 1936	Week ended July 13, 1935	Week ended July 11, 1936	Week ended July 13, 1935	Week ended July 11, 1936	Week ended July 13, 1935
New England States:								
Maine.....	1	0	17	8	0	0	1	1
New Hampshire.....	0	0	3	8	0	0	0	0
Vermont.....	3	0	7	2	0	0	1	1
Massachusetts.....	1	3	66	74	0	0	0	4
Rhode Island.....	0	1	10	6	0	0	0	1
Connecticut.....	0	2	10	33	0	0	4	0
Middle Atlantic States:								
New York.....	4	18	225	228	0	0	8	16
New Jersey.....	1	4	90	57	0	0	6	1
Pennsylvania ¹	0	0	121	144	0	0	3	68
East North Central States:								
Ohio.....	1	0	40	129	0	0	12	14
Indiana.....	0	0	28	26	1	2	3	1
Illinois ¹	8	5	183	213	13	0	12	24
Michigan.....	1	1	129	61	0	1	3	11
Wisconsin.....	0	2	115	142	21	16	4	1
West North Central States:								
Minnesota.....	0	0	58	72	4	6	0	47
Iowa.....	0	0	46	15	5	5	2	1
Missouri.....	0	1	37	19	11	0	11	21
North Dakota.....	1	0	3	10	1	0	0	0
South Dakota.....	0	0	2	2	5	9	0	0
Nebraska.....	0	0	14	3	3	7	1	1
Kansas.....	2	0	63	27	5	9	5	4
South Atlantic States:								
Delaware.....	0	0	2		0	0	0	0
Maryland ^{1,2}	1	0	18	40	0	0	4	12
District of Columbia.....	0	3	1	7	0	0	0	1
Virginia ¹	0	45	14	6	0	1	14	17
West Virginia.....	2	0	17	12	0	0	5	21
North Carolina.....	2	52	25	15	0	0	18	43
South Carolina.....	1	3	4	2	0	0	16	33
Georgia ¹	1	0	5	1	0	0	39	37
Florida.....	0	0	0	1	0	0	0	4

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended July 11, 1936, and July 13, 1935—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended July 11, 1936	Week ended July 13, 1935	Week ended July 11, 1936	Week ended July 13, 1935	Week ended July 11, 1936	Week ended July 13, 1935	Week ended July 11, 1936	Week ended July 13, 1935
East South Central States:								
Kentucky.....	1	0	10	19	0	0	17	31
Tennessee.....	12	11	4	10	0	0	20	42
Alabama ¹	82	6	14	11	0	0	26	28
Mississippi ²	0	1	5	-----	0	0	30	6
West South Central States:								
Arkansas.....	0	0	1	11	0	0	22	23
Louisiana.....	1	3	6	3	0	0	19	25
Oklahoma ³	0	0	5	11	0	1	13	14
Texas ⁴	0	1	8	11	0	0	29	28
Mountain States:								
Montana.....	0	0	31	2	12	1	2	1
Idaho ⁵	0	0	3	2	2	0	0	4
Wyoming.....	0	0	11	5	14	3	0	0
Colorado ⁶	0	0	21	42	0	3	0	2
New Mexico.....	0	0	10	8	0	0	5	11
Arizona.....	0	0	6	7	0	0	0	7
Utah ⁷	0	0	12	23	1	0	0	0
Pacific States:								
Washington.....	1	0	14	30	4	29	9	1
Oregon.....	0	0	9	19	1	9	4	1
California.....	8	29	125	80	0	3	11	5
Total.....	135	191	1,648	1,656	103	105	379	614
First 28 weeks of year.....	704	1,372	178,532	175,080	5,965	5,081	4,276	5,623

¹ New York City only.
² Rocky Mountain spotted fever, week ended July 11, 1936, 11 cases, as follows: Pennsylvania, 2; Illinois, 2; Maryland, 4; Virginia, 2; Idaho, 1.
³ Week ended earlier than Saturday.
⁴ Typhus fever, week ended July 11, 1936, 28 cases, as follows: Georgia, 16; Alabama, 6; Texas, 5; Colorado, 1.
⁵ Exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following reports of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week.

State	Men- gococ- cus menin- gitis	Diph- theria	Influ- enza	Mala- ria	Mea- sles	Pellag- ra	Pollo- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
<i>May 1936</i>										
Colorado.....	2	20	1	-----	142	-----	0	383	12	5
New Hampshire.....	-----	-----	-----	-----	-----	-----	0	35	0	2
<i>June 1936</i>										
Arizona.....	2	13	74	12	358	-----	0	50	0	11
Delaware.....	1	4	-----	1	52	-----	0	6	0	1
Indiana.....	6	27	33	-----	40	-----	0	222	15	16
Maine.....	-----	3	-----	-----	1,830	-----	0	40	0	6
New Hampshire.....	-----	-----	-----	-----	-----	-----	0	23	0	0
New Mexico.....	3	16	11	10	164	4	1	151	-----	34
North Carolina.....	25	44	11	-----	135	159	4	66	2	30
Wyoming.....	1	1	-----	-----	9	-----	0	69	18	0

Summary of monthly reports from States—Continued

May 1936		June 1936—Continued		June 1936—Continued	
Colorado:	Cases	German measles:	Cases	Tetanus:	Cases
Actinomycosis.....	1	Arizona.....	28	Maine.....	1
Chicken pox.....	156	Delaware.....	18	Trachoma:	
Impetigo contagiosa.....	3	Maine.....	239	Arizona.....	23
Mumps.....	318	New Mexico.....	1	New Mexico.....	1
Rocky Mountain		North Carolina.....	310	North Carolina.....	1
spotted fever.....	6	Mumps:		Tularaemia:	
Whooping cough.....	139	Arizona.....	186	Wyoming.....	2
		Delaware.....	29	Typhus fever:	
		Indiana.....	82	North Carolina.....	2
June 1936		Maine.....	305	Undulant fever:	
Anthrax:		New Mexico.....	81	Arizona.....	6
Arizona.....	1	Wyoming.....	14	Delaware.....	1
Chicken pox:		Paratyphoid fever:		Indiana.....	2
Arizona.....	26	New Mexico.....	1	Maine.....	2
Delaware.....	15	North Carolina.....	2	North Carolina.....	4
Indiana.....	67	Puerperal septicemia:		Vincent's infection:	
Maine.....	90	New Mexico.....	1	Maine.....	8
New Mexico.....	36	Rabies in animals:		Whooping cough:	
North Carolina.....	164	Indiana.....	63	Arizona.....	66
Wyoming.....	15	Rocky Mountain spotted		Delaware.....	19
Dysentery:		fever:		Indiana.....	119
Arizona.....	54	North Carolina.....	2	Maine.....	108
New Mexico (amoebic-)	1	Wyoming.....	19	New Mexico.....	54
New Mexico (bacil-	5	Septic sore throat:		North Carolina.....	130
lary).....		Maine.....	3		
Epidemic encephalitis:		New Mexico.....	5		
Arizona.....	1	North Carolina.....	5		
Food poisoning:					
New Mexico.....	4				

HUMAN AND RODENT PLAGUE IN CALIFORNIA, IDAHO, AND UTAH

Positive bacteriological findings for plague were reported July 13 in the case of a boy bitten by a ground squirrel on June 24 near Beaver, Beaver County, Utah.

Ground squirrels, 2 from a ranch 2 miles north of Bone, Bonneville County, Utah, shot June 23, and 5 secured June 24 from a ranch 4 miles southwest of Bone, were proved plague infected. Also fleas taken June 25 and 26 from 75 squirrels on the latter ranch were found positive for plague.

The Director of Public Health of California has reported plague infection in 1 Oregon squirrel received at the laboratory on July 7 from a point 5 miles south of Pine Creek, Modoc County; also in 3 collections of fleas received at the laboratory on June 25 from places 2 miles west and 2 miles south, 8 miles north and 5 miles east, and 7 miles north and 5 miles east of Davis Creek, Modoc County. He has also reported plague infection in 5 squirrels received at the laboratory on July 2 from a place 4 miles northwest of Santa Cruz, Santa Cruz County, and in 4 collections of fleas from places 4 to 8 miles east of Watsonville, 1 collection from 4 miles west of Watsonville, 1 from Chittenden Station, and 1 from 8 miles southeast of Capitola, all in Santa Cruz County.

WEEKLY REPORTS FROM CITIES

City reports for week ended July 4, 1936

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table. Weekly reports are received from about 700 cities, from which the data are tabulated and filed for reference.

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Small-pox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Maine:											
Portland	0		0	45	0	1	0	1	0	7	16
New Hampshire:											
Concord	0		0	0	0	0	0	0	0	0	5
Manchester											
Nashua	0			0		0	0		0	0	
Vermont:											
Barre											
Burlington	0	0	0	0	0	0	0	0	0	3	8
Rutland	0	0	0	3	1	0	0	0	0	0	6
Massachusetts:											
Boston	2		0	117	20	18	0	9	0	52	199
Fall River	0		0	2	1	4	0	0	0	0	20
Springfield	0		0	1	2	1	0	1	0	2	34
Worcester	0		0	27	1	9	0	1	0	6	45
Rhode Island:											
Pawtucket	0		0	0	0	0	0	0	0	0	
Providence	0		0	1	2	4	0	1	0	1	70
Connecticut:											
Bridgport	0		0	8	1	0	0	0	0	4	26
Hartford	0		0	2	1	2	0	4	0	5	32
New Haven	0		0	0	3	0	0	1	0	8	43
New York:											
Buffalo	1		0	71	5	14	0	5	0	6	124
New York	30		0	549	58	124	0	67	5	87	1,267
Rochester	0		0	1	3	1	0	2	1	0	53
Syracuse	0		0	31	1	4	0	2	0	13	46
New Jersey:											
Camden	0	1	1	12	1	1	0	1	0	3	36
Newark	0		0	14	0	14	0	3	0	22	72
Trenton	0		0	5	1	0	0	3	0	5	36
Pennsylvania:											
Philadelphia	5	1	1	100	19	42	0	28	0	49	443
Pittsburgh	7		0	8	15	43	0	6	0	32	140
Reading	0		0	6	1	0	0	0	0	2	22
Seranton	0			2		0	0		0	5	
Ohio:											
Cincinnati	5		1	6	4	2	0	7	0	0	135
Cleveland	3	2	1	80	8	35	0	10	1	111	193
Columbus	0	1	1	0	2	2	0	6	0	13	69
Toledo	0		0	7	0	2	0	1	1	46	48
Indiana:											
Anderson	0		0	0	0	1	0	1	0	5	5
Fort Wayne	1		0	0	2	2	0	0	0	0	23
Indianapolis	2		0	4	6	9	0	7	0	15	97
South Bend	0		0	0	0	0	0	0	0	0	17
Terre Haute	0		0	2	0	1	0	0	0	0	31
Illinois:											
Alton	0		0	0	0	6	0	0	0	3	5
Chicago	24		0	10	37	106	0	47	0	76	679
Elgin	0		0	1	1	0	0	1	0	5	9
Moline	0		0	0	2	1	0	0	0	0	9
Springfield	0		0	0	1	1	0	0	0	6	23
Michigan:											
Detroit	3	1	1	10	12	80	0	22	0	136	248
Flint	0		0	1	2	5	0	0	0	2	26
Grand Rapids	0		0	2	0	4	0	0	1	5	30
Wisconsin:											
Kenosha	0		0	0	0	1	21	0	0	5	5
Milwaukee	1		0	14	6	26	0	5	0	61	95
Racine	0		0	0	0	2	0	0	0	0	13
Superior	0		0	0	2	8	0	0	0	0	8
Minnesota:											
Duluth	0		0	0	2	15	0	0	0	10	29
Minneapolis	0		1	22	3	10	0	1	1	1	86
St. Paul	0		0	35	0	6	0	3	1	4	55

City reports for week ended July 4, 1936—Continued

State and city	Diph- theria cases	Influenza		Mea- sles cases	Pneu- monia deaths	Scar- let fever cases	Small- pox cases	Tuber- culosis deaths	Ty- phoid fever cases	Whoop- ing cough cases	Deaths, all causes
		Cases	Deaths								
Iowa:											
Cedar Rapids	0			0		0	0		0	1	
Davenport	0			0		4	0		0	0	
Des Moines	3			0		0	0		0	0	22
Sioux City	0			0		2	2		0	0	
Waterloo	0			1		3	0		0	0	
Missouri:											
Kansas City	3		0	0	4	12	1	6	1	1	108
St. Joseph											
St. Louis	6		0	5	6	18	0	11	2	17	242
North Dakota:											
Fargo	0		0	0	0	1	0	0	0	0	2
Minot	0		0	0	0	3	0	0	0	0	5
South Dakota:											
Aberdeen	0		0	0		0	0		0	0	
Sioux Falls	0		0	0	0	0	0	0	0	0	7
Nebraska:											
Omaha	2		0	1	3	2	4	0	0	2	40
Kansas:											
Lawrence	0		0	0	0	1	0	0	0	0	6
Topeka											
Wichita	0		0	1	4	3	0	0	0	1	30
Delaware:											
Wilmington	4		0	6	1	0	0	2	0	7	36
Maryland:											
Baltimore	2	1	1	131	5	11	0	11	0	81	176
Cumberland	0		0	0	0	0	0	0	0	0	10
Frederick	0		0	1	0	0	0	0	0	1	7
Dist. of Columbia:											
Washington	14		0	57	4	9	0	14	0	38	167
Virginia:											
Lynchburg	0		0	2	0	1	0	0	0	1	8
Richmond	0		0	0	2	3	0	2	0	1	63
Roanoke	0		0	1	0	0	0	0	0	0	6
West Virginia:											
Charleston	0		0	0	1	0	0	0	1	1	21
Huntington	0		0	0		1	0		0	0	
Wheeling	1		0	4	1	2	0	1	0	1	17
North Carolina:											
Gastonia	0		0	0	0	1	0	0	0	0	
Wilmington	0		0	0	1	0	0	0	0	0	10
Winston-Salem	0		0	0	0	1	0	1	0	0	19
South Carolina:											
Charleston	0		0	0	1	1	0	1	0	0	22
Columbia											
Florence	0		0	0	1	0	0	0	0	1	6
Greenville	0		0	1	1	0	0	0	0	0	6
Georgia:											
Atlanta	0		0	0	4	0	0	5	0	1	85
Brunswick	0		0	0	0	0	0	1	0	0	2
Savannah	0	1	1	0	1	0	0	5	1	0	29
Florida:											
Miami	0		0	0	0	0	0	1	0	7	27
Tampa	0		0	4	3	0	0	2	0	0	31
Kentucky:											
Ashland	0		0	1	2	0	0	1	1	0	18
Covington	0		0	3	4	0	0	2	0	0	12
Lexington	0		0	0	2	0	0	2	0	2	19
Tennessee:											
Knoxville	0		0	0	2	0	0	2	2	0	22
Memphis	0		2	1	2	1	0	8	1	6	85
Nashville	0		0	1	3	0	0	0	0	1	55
Alabama:											
Birmingham	0		0	1	0	1	0	3	1	2	41
Mobile	0		1	0	0	0	0	1	0	0	18
Montgomery	0	1		0		0			0	1	
Arkansas:											
Fort Smith											
Little Rock	0		0	0	1	0	0	4	0	0	10
Louisiana:											
Lake Charles	0		0	0	1	0	0	0	0	0	8
New Orleans	0	5	1	4	10	1	0	13	1	40	169
Shreveport	0		0	1	5	0	0	1	1	1	32

City reports for week ended July 4, 1936—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Small-pox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Oklahoma:											
Oklahoma City.....	0	3	0	0	2	0	0	0	0	0	27
Texas:											
Dallas.....	1		0	12	5	0	0	0	0	0	46
Fort Worth.....	1		0	2	1	0	0	3	0	0	38
Galveston.....	0		1	1	1	1	0	1	0	0	13
Houston.....	1		0	0	3	1	0	8	0	0	64
San Antonio.....											
Montana:											
Billings.....	0		0	0	1	0	1	0	0	1	6
Great Falls.....	0		0	0	0	0	0	0	0	7	14
Helena.....	0		0	0	0	2	0	0	0	0	4
Missoula.....	0		0	0	1	0	0	0	0	0	13
Idaho:											
Boise.....	0		0	1	1	0	0	0	0	0	5
Colorado:											
Colorado Springs.....	0		0	0	0	4	0	1	0	1	10
Denver.....	2		0	7	7	6	0	3	0	36	67
Pueblo.....	0		0	0	0	6	0	1	0	0	6
New Mexico:											
Albuquerque.....	0		0	0	4	0	0	0	0	0	14
Utah:											
Salt Lake City.....	0		2	20	3	6	1	1	0	7	33
Nevada:											
Reno.....											
Washington:											
Seattle.....	0		1	54	4	4	0	3	0	8	94
Spokane.....	0		0	13	0	4	0	2	1	10	22
Tacoma.....	0		0	3	3	0	0	0	0	1	23
Oregon:											
Portland.....	0		0	2	2	2	1	2	0	10	58
Salem.....	0			2		0			0	0	
California:											
Los Angeles.....	8	13	0	75	14	28	0	8	0	75	274
Sacramento.....	0	1	1	1	1	6	0	2	1	14	19
Sán Francisco.....	0	1	0	26	4	27	0	9	0	9	131

State and city	Meningococcus meningitis		Polio-myelitis cases	State and city	Meningococcus meningitis		Polio-myelitis cases
	Cases	Deaths			Cases	Deaths	
New York:				Maryland:			
New York.....	8	4	1	Baltimore.....	5	3	0
New Jersey:				West Virginia:			
Newark.....	1	0	0	Wheeling.....	2	0	0
Pennsylvania:				North Carolina:			
Pittsburgh.....	1	0	0	Wilmington.....	3	2	0
Ohio:				South Carolina:			
Cleveland.....	1	0	0	Charleston.....	1	0	0
Indiana:				Kentucky:			
Indianapolis.....	1	1	1	Ashland.....	0	2	0
Illinois:				Tennessee:			
Chicago.....	4	3	1	Memphis.....	1	0	0
Elgin.....	1	1	0	Louisiana:			
Michigan:				Shreveport.....	0	2	0
Detroit.....	1	1	0	Texas:			
Missouri:				Galveston.....	1	1	0
Kansas City.....	0	0	1	California:			
Kansas:				Los Angeles.....	2	0	2
Wichita.....	0	0	1	Sacramento.....	1	0	0

Epidemic encephalitis.—Cases: Kansas City, Mo., 1.
Pellagra.—Cases: Indianapolis, 1; Charleston, S. C., 1; Atlanta, 1; Savannah, 1; Memphis, 1; Birmingham, 1; Los Angeles, 1.
Rabies in man.—Deaths: Chicago, 1.
Typhus fever.—Cases: Montgomery, 3.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—2 weeks ended June 27, 1936.—During the 2 weeks ended June 27, 1936, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis.....			1	1	1		1		2	6
Chicken pox.....		6		144	342	54	55	14	35	650
Diphtheria.....		1	1	31	8	8	3			52
Dysentery.....						1				1
Erysipelas.....				4	5	6	2	1	3	21
Influenza.....		15			1		5		24	45
Lethargic encephalitis.....						1				1
Measles.....		22	7	348	1,221	319	76	179	176	2,348
Mumps.....		1			494	20	35	23	92	665
Paratyphoid fever.....		9						1		10
Pneumonia.....		4			36		12		7	59
Poliomyelitis.....				1	1					2
Scarlet fever.....		18	1	122	292	136	38	82	23	712
Tuberculosis.....	2	25	40	129	107	24	4	6	37	374
Typhoid fever.....	1		1	24	5		1	4	4	40
Undulant fever.....					15	1	1			17
Whooping cough.....		19		121	216	11	12	16	68	463

CUBA

Habana—Communicable diseases—4 weeks ended July 4, 1936.—During the 4 weeks ended July 4, 1936, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria.....	6	1	Scarlet fever.....	1	
Malaria.....	144		Tuberculosis.....	32	3
Poliomyelitis.....	15		Typhoid fever.....	169	5

¹ Includes imported cases.

Provinces—Notifiable diseases—4 weeks ended June 27, 1936.—During the 4 weeks ended June 27, 1936, cases of certain notifiable diseases were reported in the provinces of Cuba as follows:

Disease	Pinar del Rio	Habana	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer	1	2		1	4	1	9
Chicken pox		7		7		2	16
Diphtheria		2		1	3	4	10
Leprosy		1					1
Malaria	85	45	53	172	75	500	960
Measles	8		2	11	10	5	31
Poliomyelitis		3	1	5			9
Scarlet fever		1				1	2
Tuberculosis	13	3	9	35	14	24	109
Typhoid fever	7	58	32	29	9	41	176

EGYPT

Infectious diseases—Third quarter 1935 —During the third quarter of 1935, certain infectious diseases were reported in Egypt as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	5	1	Plague	3	3
Cerebrospinal fever	23	22	Poliomyelitis	5	
Chicken pox	41	3	Puerperal septicemia	129	98
Diphtheria	636	300	Rabies		3
Dysentery	911	187	Scarlet fever	11	1
Epidemic jaundice	5	5	Smallpox		1
Erysipelas	865	212	Tetanus	123	91
Influenza	2,298	54	Tuberculosis (pulmonary)	1,331	609
Leprosy	54	14	Typhoid fever	1,767	422
Lethargic encephalitis		3	Typhus fever	159	49
Malaria	3,018	18	Undulant fever	2	2
Measles	1,703	684	Whooping cough	270	28
Mumps	180	8			

Vital statistics—Third quarter 1935.—Following are vital statistics for the third quarter of 1935 in all places in Egypt having a health bureau:

Population	4,603,100	Deaths per 1,000 population	32.1
Live births	48,751	Deaths from diarrhea and enteritis under 2 years of age	12,815
Births per 1,000 population	40.6	Infant mortality per 1,000 live births	261
Stillbirths	906		
Total deaths (excluding stillbirths)	36,913		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for June 26, 1936, pages 858-870. A similar cumulative table will appear in the PUBLIC HEALTH REPORTS to be issued July 31, 1936, and thereafter, at least for the time being, in the issue published on the last Friday of each month.

Plague

India—Calcutta.—During the week ended July 4, 1936, 1 suspected case of plague was reported at Calcutta, India.

United States.—A report of plague infection in Modoc and Santa Cruz Counties, Calif., and Bonneville County, Idaho, and of human

plague in Utah, appears on page 1019 of this issue of the PUBLIC HEALTH REPORTS.

Smallpox

Gambia (Upper).—During the week ended July 4, 1936, 38 cases of smallpox were reported in Gambia (Upper).

Mexico.—During the month of April 1936 smallpox was reported in Mexico as follows: Aguascalientes, Aguascalientes State, 4 cases, 1 death; Guadalajara, Jalisco State, 39 cases, 34 deaths; Mexico State, 6 cases; Mexico, D. F., 13 cases, 5 deaths; Puebla, Puebla State, 1 case; Sonora State, 1 case.

Typhus Fever

Irish Free State—Galway County—Bothar Buidhe—Carraroe.—During the week ended June 27, 1936, 1 case of typhus fever was reported at Carraroe, Bothar Buidhe, Galway County, Irish Free State.

Mexico.—During the month of April 1936 typhus fever was reported in Mexico as follows: Aguascalientes, Aguascalientes State, 5 cases, 4 deaths; Guanajuato State, 2 cases, 2 deaths; Mexico State, 6 cases; Mexico, D. F., 40 cases, 20 deaths; Puebla, Puebla State, 3 cases, 1 death; San Luis Potosi, San Luis Potosi State, 3 cases.

Yellow Fever

Brazil.—Yellow fever has been reported in Brazil as follows: Fructal, Minas Geraes State, 1 case, 1 death, June 1, 1936; Amparo, Sao Paulo State, 1 case, 1 death, June 6, 1936.

Sudan (French)—Kayes.—On July 4, 1936, 1 suspected case of yellow fever with 1 death was reported at Kayes, French Sudan.